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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,398	03/31/2004	Wang Yuch	42P18694	7576

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EXAMINER

LEE, SIN J

ART UNIT PAPER NUMBER

1752

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/815,398

Applicant(s)

YUEH ET AL.

Examiner

Sin J. Lee

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4,15 and 28-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4,15,30-34,36-42,44 and 45 is/are allowed.
- 6) ☒ Claim(s) 28,29,35,43 and 46-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. In view of the amendment of November 9, 2005, previous 112 rejections on claims 28, 29, 32-36 and 46-54 are hereby withdrawn.
2. Due to newly cited prior art, the following rejection is made non-final.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

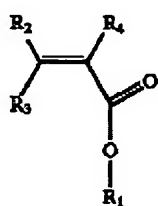
4. Claims 35, 43 and 52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In those claims, applicants recite, "C<sub>1-6</sub> cyclopentyl, C<sub>1-6</sub> cyclohexyl, C<sub>1-6</sub> adamantyl". How can a cyclopentyl ring have 1-4 carbon atoms?; how can a cyclohexyl ring have 1-5 carbon atoms?; and how can an adamantyl ring have 1-6 carbon atoms? Appropriate correction or clarification is required.
5. It is to be noted that present claim 30 (which depends from claim 4) is interpreted by the Examiner to mean that the at least one hydrophilic group of claim 4, which comprises a sulfhydryl group, further comprises a hydroxyl group.

#### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 28, 29 and 46-54 are rejected under 35 U.S.C. 102(e) as being anticipated by Dammel (US 2005/0147915 A1).

Dammel teaches a photoresist composition which contains an acid-generator and an *acid-labile* polymer that comprises at least one monomer unit having a pendant group of substituted or unsubstituted higher adamantane (see claim 1). As one of only three examples of such monomer unit, Dammel teaches (see claim 2) the following (*meth*)acrylate monomer unit (1A):



(1A)

in which R<sub>1</sub> is -Z or -Y-Z in which Y is an alkylene or cyclic alkylene and Z is *substituted* or unsubstituted *higher adamantane*. Dammel teaches examples of substituted higher adamantanes, which are *substituted by plurality of -OH groups*, in Fig.1-9. Based on this teaching, one skilled in the art would immediately envisage using an acid-labile polymer that comprises at least one monomer unit of formula (1A) in which R<sub>1</sub> represents those -OH substituted higher adamantanes (see also [0059] in which Dammel additionally teaches -OH substituted adamantane-containing monomer units). Dammel also teaches (claim 16) a process of imaging a positive photoresist composition comprising the steps of: coating a substrate with a film of his photoresist composition of his claim 1; imagewise exposing the photoresist film to a radiation source; and developing the exposed photoresist film using a developer. Furthermore,

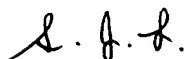
Dammel teaches ([0081]) that the exposure step may be carried out in an exposure tool in which the space between the lens and the wafer is filled with an *immersion lithography fluid*. It is the Examiner's position that when Dammel carries out his exposure step in an exposure tool, in which the space between the lens and the wafer is filled with the *immersion lithography fluid*, the exposure step would inherently wet those –OH groups (present hydrophilic groups) attached to the higher adamantine ring (present acid labile group). It is also the Examiner's position that during Dammel's developing step, those –OH groups would inherently be wet with the developer, dissolving the detached higher adamantane groups in the developer, and dissolving the polymeric chain (the (meth)acrylate chain) in the developer. Therefore, Dammel teaches present inventions of claims 28, 29 and 46-54.

***Allowable Subject Matter***

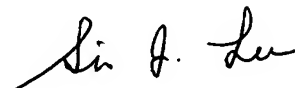
7. Claims 4, 15, 30-34, 36-42, 44 and 45 are allowed. Dammel does not teach or suggest present –SH group which is attached to the acid labile group.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee  
January 21, 2006



**SIN LEE**  
**PRIMARY EXAMINER**